EXHIBIT 1

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16 | UNITED STATES DISTRICT COURT

17 | NORTHERN DISTRICT OF CALIFORNIA

18 | SAN FRANCISCO DIVISION

19 | GOOGLE LLC,   Case No. 3:20-cv-06754-WHA
Related to Case No. 3:21-cv-07559-WHA
20 | Plaintiff and Counter-defendant,
OPENING EXPERT REPORT OF
21 | v.   **DOUGLAS C. SCHMIDT**

22 | SONOS, INC.,

23 | Defendant and Counter-claimant.

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- an iPhone 11 running iOS version 15.4.1 provisioned with the YouTube Main app (version 17.44.4), the YouTube Music app (version 5.31.2), the YouTube Kids app (version 7.43.0), and the YouTube TV app (version 6.39.1);
- a Pixelbook running ChromeOS version 79.0.3945.123 provisioned with the YouTube Main app (version 17.43.36), the YouTube Music app (version 5.31.50), and the YouTube Kids app (version 7.43.0);
- a Nest Hub player running Cast firmware version 1.63.322641, which was named "Kitchen";
- a Chromecast with Google TV player running Cast firmware version 1.61.304433, which was named "TV Room";
- a Nest Audio player running Cast firmware version 1.56.309385, which was named "Deck."

See Appendix 2, 61-67. I will refer to this exemplary Google system as the "YouTube Test System" herein.

110. I memorialized some of my observations during the testing of the YouTube Test System comprising (i) the exemplary Pixel 7 running each of the YouTube apps, the functionality of which I understand is representative of the functionality of other Android devices provisioned with such apps, (ii) the exemplary iPhone 11 running each of the YouTube apps, the functionality of which I understand is representative of the functionality of other iOS devices provisioned with such apps, (iii) the exemplary Pixelbook running the YouTube Main, YouTube Music, and YouTube Kids apps, the functionality of which I understand is representative of the functionality of other ChromeOS devices provisioned with such apps, and (iv) the exemplary Nest Hub, Chromecast with Google TV, and Nest Audio players, the functionality of which I understand is representative of the functionality of the other Receivers. Some of my observations are discussed below in this Report and memorialized in screenshots or photos included in Appendix 2 or my demonstrative slide deck attached as Appendix 1.

111. I reserve the right to conduct a demonstration of the functionality of the YouTube Test System and/or to present additional screenshots or photos illustrating the use and testing of the YouTube Test System. I also reserve the right to create additional demonstratives from the illustrations included in the body of this Report and/or in Appendix 2 and include them in my demonstrative slide deck (Appendix 1) to assist in my trial testimony.

X.   ASSERTED CLAIMS & CLAIM CONSTRUCTION

112. The following identifies the claims from the '033 Patent that I understand Sonos is

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currently asserting are infringed directly and indirectly by Google. These are the claims that I have been asked to opine on.

- "Computing device" claims: 1, 2, 4, 9, 11, 16
- "Computer-readable medium" claims: 12, 13

113.   I understand that the Court construed the term "playback queue" as "a list of multimedia content selected for playback" in the context of claim 13 of the '615 Patent. *See, e.g.*, 20-cv-6754, Dkt. 316, 8 (rejecting "Google's proposal to include the term 'multimedia item' in the construction" and construing "playback queue" in claim 13 of the '615 Patent to recite "multimedia content" because "[t]he claim uses the term 'multimedia content,' and there is no need to introduce additional ambiguity by importing a new term.").

114.   In reaching its construction, I understand that the Court reasoned (i) "a list of one is still a list," (ii) "nothing requires a 'playback queue' to contain plural multimedia items" and thus, "the list must contain at least one item, but not necessarily more than one," and (iii) a user need not "directly populate and manage the queue" and thus, "the list does not necessarily… require users to select content directly." *Id.*, 7-8.

115.   I note that the '033 Patent's claims do not recite the term "multimedia content" like the '615 Patent's claims do, but instead, the '033 claims recite the term "media item." For purposes of the '033 Patent, therefore, I will interpret the Court's construction of "playback queue" (provided in the context of claim 13 of the '615 Patent) as "a list of one or more media items selected for playback."

116.   Other than the above-discussed order, I understand that no other claim construction order has been issued in this case and that the parties dispute the meaning of various terms relevant to the '033 Patent as follows:

Term	Sonos	Google
"playback device"	"data network device configured to process and output audio"	Plain and ordinary meaning
"data network"	Plain and ordinary meaning, which is "a medium that interconnects devices, enabling them to send digital data packets to and receive digital data	Plain and ordinary meaning

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Term	Sonos	Google
	packets from each other"	
"remote playback queue"	Plain and ordinary meaning	"remote playback queue provided by a third party application"
"cloud"	Plain and ordinary meaning	"over a network"
"an instruction for the at least one given playback device to take over responsibility for playback of the remote playback queue from the computing device, wherein the instruction configures the at least one given playback device to"	Plain and ordinary meaning	Instruction means one instruction

117.   I set forth the bases for my agreement with Sonos's proposed construction for "data network" in two declarations that I submitted while this case was still in the Western District of Texas, which I hereby incorporate by reference. *See* Ex. 3, ¶¶39-85 (discussing "data network"); Ex. 4, ¶¶24-65 (discussing "data network").

118.   I also previously set forth my opinions that Google's proposed construction for "playback queue" is inconsistent with how a POSITA would have interpreted this term in the context of the '033 Patent in my Claim Construction Report that was submitted with this case in the Northern District of California, which I hereby incorporate by reference. *See* Ex. 5, ¶¶41-95 (discussing "playback queue").

119.   Lastly, I understand that the parties agreed that "transport control operation" should be construed as "operation that controls a playback-related function." I have also been asked to apply the plain and ordinary meaning of certain undisputed terms, such as "configures" (*supra* ¶320) and "comprises" (*supra* ¶381).

XI.   INFRINGEMENT BY GOOGLE

A.   Overview of Ultimate Opinions on Infringement

120.   For the reasons that I discuss in detail below, it is my opinion that (i) any user device (e.g., smartphone, tablet, laptop, etc.), including any Pixel smartphone, tablet, or laptop, provisioned with one or more of the YouTube apps, and (ii) any Hub device provisioned with the

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1   YouTube Main and/or YouTube Music apps satisfies each limitation of the below-identified claims

2   of the '033 Patent:

Installed Google App	Computer Devices	Claims
YouTube Main app	User device	1, 2, 9, 11, 12, 13, 16
	Hub device	1, 9, 11, 12, 16
YouTube Music app	User device	1, 2, 4, 9, 11, 12, 13, 16
	Hub device	1, 4, 9, 11, 12, 16
YouTube Kids app	User device	1, 2, 9, 11, 12, 13, 16
YouTube TV app	User device	1, 2, 9, 11, 12, 13, 16

B.   Overview of Casting YouTube

121.   A YouTube Sender can be in a non-Casting mode of operation (where the Sender itself is operable to playback media) or in a Casting mode of operation (where a Receiver is operable to playback media after a Cast session is initiated via the Sender and the Sender is operable to control the Receiver's playback). *See, e.g.*, Mo Dep. Tr., 130:6-17; Nicholson Dep. Tr., 78:24-79:24.

122.   More specifically, a YouTube Sender's ███████████████ can either be in a ██ *See, e.g.*, GOOG-SONOSWDTX-00041491 ████████████████████████████████ 95.

1.   YouTube Sender in Non-Casting Mode

123.   While in the non-Casting mode of operation, (i) each YouTube app installed on a Sender enables a user to select a single media item (e.g., a song, video, or on-demand TV program) for playback at the Sender and (ii) each YouTube app except for the YouTube TV app[8] enables a user to select a collection of media items (e.g., an album, user-created playlist, service-provided playlist, etc.) for playback at the Sender. *See, e.g.*, Mo Dep. Tr., 48:25-49:17, 50:6-50:12; Nicholson Dep. Tr., 18:1-19:3, 43:6-15, 84:8-85:1. Screenshots demonstrating examples of this functionality of a Sender running each of the YouTube apps are shown in Appendix 2 for various OS versions of the apps. Appendix 2, pp.1-2, 7-8, 13-15, 18-19, 23-24, 28-30.

124.   Each YouTube media service leverages YouTube cloud infrastructure, which is a complex cloud computing system that includes one or more "Innertube" servers (e.g., that host the

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[8] My discussion herein with respect to YouTube TV is with regards to playback of its "on-demand" TV content, as opposed to playback of its "live" TV content.

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1 "WatchNext," ████████████████████████████████ and one or more MDx[9]

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3 ██

4 ██

5 ██

6 ██

7 ██████████████████

8   125.   These cloud servers perform various functions to enable Senders (and Receivers) to

9 playback YouTube content. ████████████████████████████████

10 ██

11 ██

12 ██████████████████ For some of the YouTube apps, an "Autoplay" setting must be enabled

13 for this behavior to occur, which I understand is enabled by default for YouTube Main and

14 YouTube Music but disabled by default for YouTube Kids, and, for YouTube TV, I understand

15 that the automatic-recommendation feature is not a user changeable setting for on-demand content.

16 *See, e.g.*, GOOG-SONOSWDTX-00005974 [██████████], 74 ("██████████████████

17 ██

18 ██

19 ██████████."); GOOG-SONOSWDTX-00052121 [██████████████ 27-28 ██████

20 ██

21 ██); GOOG-SONOSWDTX-

22 00052111 [██████████████████████], 11-12:

23 ██

24 ██

25 ██s

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26 [9] I understand that "MDx" (or "multi-device experience") was renamed as ██████ but Google
often still uses the term "MDx." *See, e.g.*, Mo Dep. Tr., 206:13-21; GOOG-SONOSWDTX-

27 00039661; GOOG-SONOSWDTX-00039811; GOOG-SONOSWDTX-00039818.

28 ██
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4   SONOS-SVG2-00233813 [█████████████████████████████████████

5   ██."); Nicholson

6   Dep. Tr., 48:11-50:19, 69:10-70:5, 97:6-22.

7   126.   After a user selects one or more media items for playback at the Sender, █

8   ███

9   ██   *See,*

10   *e.g.,* ███

11   ████████████████████████████   video IDs   ████████████████

12   ███

13   ███

14   ███

15   ████████████████; GOOG-SONOSWDTX-00052111 [Life of a video recommendation], 13

16   ("Whenever a YouTube user visits the Home page or a watch page, █████████████

17   ███

18   ███

19   ███████████████████████) (emphasis original); Mo Dep. Tr., 38:1-6;

20   Nicholson Dep. Tr., 57:3-58:1, 70:6-75:18, 76:10-13.

21   127.   The below figure from a ████████████████████████████

22   ███

23   ███

24   ███

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27   ───────────────────────────

28   [11] I understand that YouTube Music ██████████████████████████████████
      █████████████████████████████████████   *See, e.g.,* Nicholson
      Dep. Tr., 58:9-25.

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████████████████████████████

GOOG-SONOSWDTX-00039785 [Server], 89; *see also, id.*, 88 ("When initiating playback on a

long playlist, ██

██).

128.   I will generally refer to the list of media items provided by ████████████

████████████████████████   ████████████████

██

██

129.   Next, after a user selects one or more media items for playback at the Sender, the

██

for playback.   For instance, ████████████████████████████

████████   ████████████████████████████████

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██

██

██

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[12] Google uses the word "client" at times to refer to one or both of a Sender and Receiver, where context dictates whether the word "client" is only referring to one or the other. *See, e.g.*, Mo Dep. Tr., 28:24-29:1.

[13] YouTube uses a videoId regardless of whether the media item is a song, video, or TV program.

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1 ▮▮▮▮▮▮▮], 18 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

2 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

3 130.   A representation of the Sender's ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

4 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ the Sender. *See, e.g.,*

5 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ 98; Nicholson Dep. Tr., 40:11-41:4, 54:24-55:5.

6 Screenshots demonstrating examples of this functionality of a Sender running each of the YouTube

7 apps are shown in Appendix 2 for various OS versions of the apps. Appendix 2, pp. 1-2, 7-8, 13-

8 15, 18-19, 23-24, 28-30.

9 131.   While in the non-Casting mode, a YouTube Sender causes a graphical interface

10 (e.g., presented via the Sender's touchscreen) to display a control interface that includes transport

11 controls for controlling the YouTube Sender's media playback, such as a play/pause transport

12 control, a skip forward transport control, and/or a skip back transport control. Each of these

13 transport controls enables control of a respective playback-related function at the Sender.

14 132.   For instance, selecting the play/pause transport control causes the Sender to render

15 media or pause its rendering of media, respectively. Likewise, selecting the skip forward transport

16 control causes the Sender to begin rendering the next media item of its local queue. Moreover,

17 selecting the skip back transport control causes the Sender to begin rendering the media item before

18 the current media item. Screenshots demonstrating examples of this functionality of a Sender

19 running each of the YouTube apps are shown in Appendix 2 for various OS versions of the apps.

20 Appendix 2, pp. 3-6, 9-12, 16-17, 20-22, 25-27, 31-32.

21 **2.   YouTube Sender Transitioning to Casting Mode of Operation**

22 133.   A YouTube Sender utilizes the ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ MDx

23 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

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25 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ In this regard, an "MDx session server" (or simply,

26 "MDx server") ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

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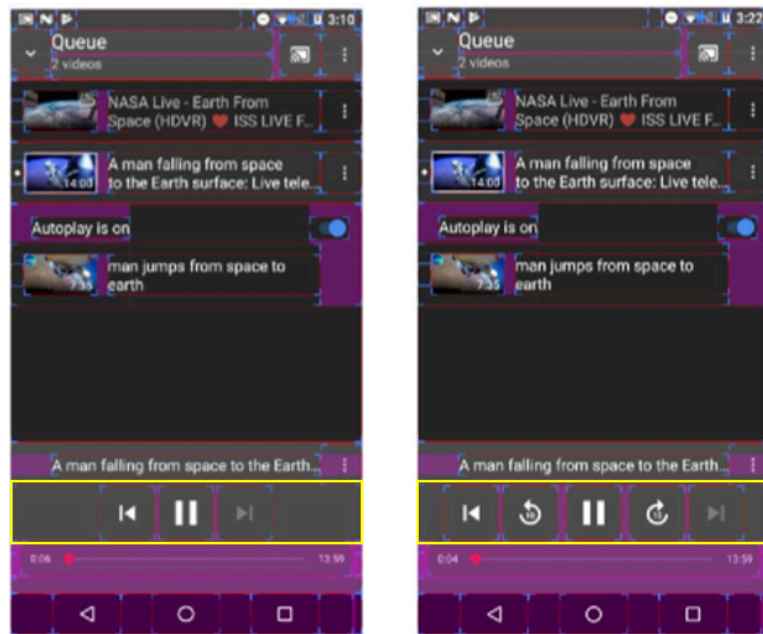
GOOG-SONOSWDTX-00042104 [Jump Buttons | ███████████████████], 104 (annotations added).

173.   Screenshots demonstrating examples of this functionality of a Sender running each of the YouTube apps are shown in Appendix 2 for various OS versions of the apps. Appendix 2, pp. 43-52.

C.   Overview of "Stream Transferring" from a Hub Sender

174.   A Hub device is a special type of Cast-enabled media player that can operate in a first mode in which it plays back media locally like any other Receiver (which I will refer to as a "local playback mode") or in a second mode in which it can control one or more other Cast-enabled media player's playback (which I will refer to as a "remote mode"). *See, e.g.*, GOOG-SONOSWDTX-00050458 [DG Media Player Cast Control], 63, 68, 74.   A Hub device can transition from operating in the local playback mode to operating in the remote mode as part of a "stream transfer" in which, much like a standard Sender, the Hub device can transfer responsibility for media playback from itself to one or more other Cast-enabled media players.   As such, I may refer to a Hub device as a "Hub Sender."   I understand that the Google's 30(b)(6) witness for stream transfer ██ ██████ *See, e.g.*, Maclellan Dep. Tr. (Nov. 2022), 204:12-205:25.

175.   With respect to the functionality that I discussed above, a Hub Sender operates in a

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1 conceptually similar manner as a standard Sender, which makes some of the above discussion

2 relevant for the Hub Sender as well. However, there are some differences, which I discuss below.

3   176. As I discuss later, a Hub Sender's ability to "stream transfer" is relevant to the

4 Asserted Claims of the '033 Patent when the Hub Sender is provisioned with the YouTube Main

5 or YouTube Music app. Thus, the following discussion of a Hub Sender focuses on such a scenario.

6   **1. Hub Sender Operating in Local Playback Mode**

7   177. While operating in the local playback mode, a Hub Sender can ███████

8 ██

9 ██

10 ██

11 ██

12 ██████████████████████████

13   178. A Hub Sender can begin playing back media while ████████

14 ██

15 ██

16 ██

17 ██

18 ██

19 ██

20 ██

21 ██

22 ████████████████████

23   179. In any event, the given YouTube media service leverages the YouTube cloud

24 infrastructure to enable the Hub Sender to playback YouTube content from a Watch Next queue in

25 much the same way that a standard Receiver plays back content from a Watch Next queue after a

26 Cast session is initiated. *Supra* ¶¶124-130. In this way, the Hub Sender receives data identifying

27 one or more media items from the Watch Next queue, displays a representation of those one or

28 more media items via its touchscreen, and begins playing back those one or more media items.

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1   Screenshots demonstrating examples of this functionality of a Hub Sender running the YouTube

2   Main and YouTube Music apps are shown in Appendix 2. Appendix 2, p. 53.

3   180.   While operating in the local playback mode, the Hub Sender causes a graphical

4   interface (e.g., presented via the Hub's touchscreen) to display a control interface that includes

5   transport controls for controlling the Hub Sender's media playback, such as a play/pause transport

6   control, a skip forward transport control, and/or a skip back transport control. As with the standard

7   Sender, each of these transport controls enables control of a respective playback-related function

8   at the Hub Sender. Screenshots demonstrating examples of this functionality of a Hub Sender

9   running the YouTube Main and YouTube Music apps are shown in Appendix 2. Appendix 2, p.

10 54.

11   **2.**   **Hub Sender Transitioning to Remote Mode**

12   181.   As explained, a Hub Sender can transition from operating in the local playback mode

13 to operating in the remote mode as part of a "stream transfer." A Hub Sender can engage in a

14 "stream transfer" of its own playback so long as it is on a Wi-Fi network that contains at least one

15 connected Receiver that is capable of playing back the media currently being played by the Hub

16 Sender. For instance, if playback of YouTube Main is to be transferred, ███████████████

17 ███

18 ███

19 ████████████████████████████████ If playback of YouTube Music is to be

20 transferred, ██

21 ██████████████████████████████████████

22   182. ████████████████████████████████████

23 ███

24 ███

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████████████████████████████████ *See, e.g.*, Google LLC's Objections and Responses to

Sonos, Inc.'s Second Set of Fact Discovery Interrogatories (Rog No. 21), 7-8 (Google admitting

that certain Pixel devices are preinstalled with one or both of the YouTube and/or YouTube Music

apps).

220.   In fact, Google's 30(b)(6) witness for YouTube admitted ████████████████

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████████████████████████████████████

221.   Google's 30(b)(6) witness for YouTube also admitted that a Hub device can function

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████████████████████████

222.   Indeed, I am unaware of a computing device that can run a software application like

any of the YouTube apps that would not store program instructions in data storage/memory that are

executable by the computing device's at least one processor to cause the computing device to

perform functions specified in the program instructions. *See also, e.g.*, Maclellan Dep. Tr. (Nov.

2022), 240:6-241:5.

223.   It is therefore my opinion that each YouTube Sender includes "program instructions

stored on the non-transitory computer-readable medium that, when executed by the at least one

processor, cause the computing device to perform [the recited] functions."

224.   It is therefore my opinion that each YouTube Sender satisfies claim limitations 1.0-

1.3 of the '033 Patent for at least the foregoing reasons.

        b.   **[1.4] Each YouTube Sender Is Programmed with the Capability to Operate in a First Mode in Which the YouTube Sender Is Configured for Playback of a Remote Playback Queue**

225.   Claim 1 of the '033 Patent requires "program instructions stored on the non-

transitory computer-readable medium that, when executed by the at least one processor, cause the

computing device to perform functions comprising:" **[1.4]** "operating in a first mode in which the

- 68 -

computing device is configured for playback of a remote playback queue provided by a cloud-based computing system associated with a cloud-based media service."

226.   As I explained before in paragraph 113, it is my understanding that the Court construed the term "playback queue" in the context of the '615 Patent as "a list of multimedia content selected for playback," and I will interpret the Court's construction of "playback queue" as "a list of one or more media items selected for playback" for purposes of the '033 Patent. *Supra* ¶113.

227.   As noted above, I understand that the parties dispute the proper construction for the following claim terms that are relevant to limitation 1.4:

Term	Sonos	Google
"remote playback queue"	Plain and ordinary meaning	"remote playback queue provided by a third party application"
"cloud"	Plain and ordinary meaning	"over a network"

228.   In my opinion, each YouTube Sender is programmed with the functional capability required by claim limitation 1.4 under the plain and ordinary meaning of the above-referenced terms (in conjunction with accounting for the Court's construction of "playback queue"), as well as under Google's interpretation.

229.   **First**, as explained before, (i) a user device installed with any YouTube app can operate in a non-Casting mode and (ii) a Hub device installed with either the YouTube Main or YouTube Music app can operate in a local playback mode, where in each such mode the device is configured for playback of a list of one or more media items (the Watch Next queue) provided by the YouTube cloud infrastructure, thereby amounting to the claimed "first mode." *Supra* ¶¶123-32, 177-80.

230.   In fact, each YouTube Sender displays a representation of at least part of the Watch Next queue while the YouTube Sender operates in this mode. *See, e.g.*, Appendix 2, pp. 1-2, 7-8, 13-15, 18-19, 23-24, 28-30, 53.

231.   **Second**, the YouTube cloud infrastructure amounts to "a cloud-based computing system associated with a cloud-based media service" under the plain and ordinary meaning of that

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1   claim term (and under Google's broader interpretation "over a network").

2   232.   For instance, each YouTube service –YouTube Main, YouTube Music, YouTube

3   Kids, and YouTube TV– constitutes a "cloud-based media service" since (i) each is a service that

4   provides media content, (ii) each is a service hosted by a computing system that is remote from the

5   devices that consume the media content (e.g., user devices, Hub devices, and other Receivers), and

6   (iii) each is accessible to those devices over the Internet.

7   233.   Moreover, the YouTube cloud infrastructure is a cloud-based computing system that

8   includes one or more "Innertube" servers (e.g., that host the WatchNext, ███████████████

9   █████████████████████   and one or more MDx servers, among other servers. *Supra* ¶124.

10 Each of these servers is (i) remote from the YouTube Sender and Receiver that are on a local Wi-

11 Fi network and (ii) accessible over the Internet. In fact, Google's 30(b)(6) witness for YouTube

12 ██. *See, e.g.,*

13 Mo Dep. Tr., 62:3-6, 77:4-17.

14 234.   In addition, the YouTube cloud infrastructure is associated with (e.g., connected or

15 involved with) each YouTube media service at least because it provides cloud services for each

16 YouTube media service (e.g., WatchNext, ████████████████████████████████)

17 and enables users to experience playback of media from each YouTube media service.

18 235.   **Third**, the ██

19 ██

20 █████████████████████   amounts to "a remote playback queue provided by a cloud-based

21 computing system associated with a cloud-based media service" under the plain and ordinary

22 meaning of that claim term in light of the Court's construction of "playback queue."

23 236.   As an initial matter, a POSITA would have understood at the time of the '033 Patent

24 that the word "remote" before the phrase "playback queue" indicates that the "playback queue" is

25 not local to whatever device is to playback media identified by the contents of the "playback

26 queue," such as a "playback queue" that is accessible to a device over a network. A POSITA would

27 appreciate that where a "remote" thing is located is context dependent. For instance, something

28 that is "remote" of a first device could be located in a broader set of locations than something that

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249.   Google and its expert also vehemently argued and admitted that the YouTube cloud infrastructure provides a "remote playback queue" (what Google refers to as a "cloud queue"). *See, e.g.*, 20-cv-6754, Dkt. 210.15 [Google's Motion for Summary Judgment Pursuant to the Court's Patent Showdown Procedure], at 4:16-17 ("Google's accused devices request songs for playback from a cloud queue one-by-one."), 2:7-10 ("[Google's current (remote queue) products cannot infringe …."), 3:28-4:1 ("Google's accused systems, however, have long since moved away from a 'local playback queue' in favor of a playback queue stored in the cloud (i.e., a 'cloud queue')."), 5:1-4 ("[T]he accused YouTube system uses a 'cloud queue' in which the 'playback queue' is stored remotely on an 'MDx' server."), 5:5-7:6, 8:6-7; Dkt. 210.3 [Declaration of Samrat Bhattacharjee], at ¶49   Google

¶¶49-50, 52, 56, 58-60, 62 ("YouTube does not use a 'local playback queue on the particular playback device'—it uses a playback queue that is stored remotely in the cloud (a 'Cloud Queue')."), ¶¶64-66, 68, 71, 73-74, 81, 83-89; Dkt. 276.03 [Google's Reply in Support of Google's Motion for Summary Judgment Pursuant to the Court's Patent Showdown Procedure], at 1:16-18 ("It is undisputed that in YouTube, the playback queue is stored on an MDx server ….").

250.   As noted above, Google contends that "remote playback queue" should be construed as "remote playback queue provided by a third party application."   Relatedly, I have reviewed Google's response to Sonos's interrogatory seeking Google's non-infringement positions for the Asserted Claims of the '033 Patent and understand that Google contends "a remote playback queue

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1   Google's first infringement.

2   **B.   Alleged Alternative #2**

3   478.   Google argues that its alleged "non-infringing alternative" #2— "to have the sender

4   device maintain the queue locally on the sender device and configure the sender device to playback

5   the local queue" — is relevant to limitation 1.4 of claim 1 of the '033 Patent that requires "operating

6   in a first mode in which the computing device is configured for playback of *a remote playback*

7   *queue* provided by a cloud-based computing system associated with a cloud-based media service."

8   *See id*.

9   479.   It is my opinion that there are various flaws to Google's assertions regarding alleged

10   "non-infringing alternative" #2.

11   480.   *First*, Google has not provided sufficient details regarding this alleged alternative.

12   For example, Google has not provided sufficient details as to what is meant by "the sender device

13   *maintain[s]* the queue locally on the sender device" and how that necessarily results in limitation

14   1.4 of claim 1 not being practiced. For instance, just because a sender device might *maintain* a

15   local copy of a queue does not necessarily mean that there is not also "a remote playback queue

16   *provided by* a cloud-based computing system associated with a cloud-based media service." This

17   appears to be Google once again pushing the false premise that there can only be one "playback

18   queue" in a system. I disagree with their premise for many of the same reasons that I explained at

19   paragraphs 276-282 of my Opening Expert Report for the '615 Patent, which I incorporate by

20   reference in their entirety. Opening Expert Report of Douglas C. Schmidt (June 22, 2022). As

21   another example, Google has not provided sufficient details as to how the Sender would transfer

22   playback responsibility for the "local queue" to a Receiver in this alleged alternative. As a result,

23   I do not have enough information to fully evaluate whether this alleged alternative would have been

24   non-infringing, available, technically feasible, or commercially acceptable. Nevertheless, I have

25   made my best effort to respond to this alleged alternative based on my current understanding of the

26   limited information provided by Google. I expressly reserve the right to supplement my opinions

27   regarding this alleged alternative if and when Google provides sufficient details.

28   481.   *Second*, I have seen no evidence to support Google's assertion that "it would need

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1   three Level-4 to Level-5 software engineers working for approximately less than three months to

2   implement this alternative."   Google LLC's Eighth Supplemental Objections and Responses to

3   Plaintiff Sonos Inc.'s First Set of Fact Discovery Interrogatories (No. 18), pp. 12.
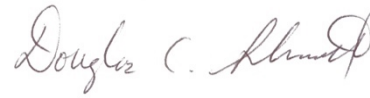
4   482.   ***Third***, Google has not explained if or how this alleged alternative would apply to

5   the infringing Hub devices. In this regard, I simply do not see how Google could argue that a Hub

6   device would maintain a "local queue" after Google vehemently argued in the context of the '615

7   Patent that its Cast-enabled media players cannot and do not maintain a "local queue." It would

8   seem to me that, if Google argues that this alleged alternative applies to the Hub devices, then this

9   alleged alternative would infringe the '615 Patent.

10   483.   Turning now to the technical substance, as I explained before in paragraph 229, (i)

11   a user device installed with any YouTube app can operate in a non-Casting mode and (ii) a Hub

12   device installed with either the YouTube Main or YouTube Music app can operate in a local

13   playback mode, where in each such mode the device is configured for playback of a list of one or

14   more media items (the Watch Next queue) provided by the YouTube cloud infrastructure. *Supra*

15   ¶229.

16   484.   While this alleged alternative is not entirely clear, Google appears to suggest that a

17   Sender would "maintain the queue locally" and transfer playback responsibility for the "local

18   queue" from the Sender to a Receiver. As noted above, to the extent that I understand this alleged

19   alternative based on the limited information that Google has provided, it is not clear to me that this

20   alleged alternative would not still infringe. In this regard, Google's interrogatory response says

21   nothing about any changes to the YouTube cloud infrastructure and/or how and from where the

22   "local queue" gets populated. As noted, just because a Sender might ***maintain*** a local copy of a

23   queue does not necessarily mean that there is not also "a remote playback queue ***provided by*** a

24   cloud-based computing system associated with a cloud-based media service." In fact, as Google

25   argued in connection with the '615 Patent, Google's alleged alternative could be nothing more than

26   a Sender having the means to ***process*** the list of media items for playback that is provided by the

27   YouTube cloud infrastructure.   *See, e.g.*, Transcript of Court Proceedings [Patent Showdown

28   Summary Judgment Hearing] (July 13, 2022), at 42:17-43:19.

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2   Dated: November 30, 2022

3   DOUGLAS C. SCHMIDT

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